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Language change in action – Variation in Scottish English

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Should one be asked to name the most remarkably Scottish features of English spoken with a Scottish accent, the most likely candidates would be typical consonants such as /r ʍ x/ on the one hand, and the lack of usual RP vowel contrasts (TRAP-PALM, LOT-THOUGHT, FOOT-GOOSE) and vowel length, on the other. Among these characteristically Scottish features, there are at least two that are currently displaying a considerable amount of variability and may be undergoing change: rhoticity and vowel duration. This article seeks to put forward a succinct but comprehensive overview of present Scottish tendencies based on a comparison between the most complete description of the Scottish accents from thirty years ago in Wells (1982: 393-416) and findings from a recent Ayrshire corpus (Pukli 2006, Jauriberry 2010). When relevant, new trends and sociolinguistically sensitive changes, as attested in current literature in sociophonetics, will be referred to, although an exhaustive review of every potentially interesting feature lies outside of the scope of the present paper.

First, a rapid overview of Scottish accents is provided in order to appreciate the complexity of the Scottish linguistic landscape. Second, the methodology applied in the paper and in the empirical analyses is presented. Third, a selection of consonantal features characteristic of today's Scottish speech is discussed with a special focus on rhoticity and recently discovered tendencies concerning the quality and frequency of /r/ sounds. Finally, a brief and simplified look at the vowel system of Scottish accents allows the reader to learn about the most important features of Scottish English and our attention will centre on phenomena related to vowel length and novel empirical findings.

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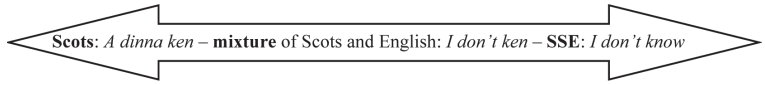
English with a Scottish accent – a continuum between Scots dialects and Scottish Standard English

English is spoken in Scotland with typical regional accents. There also exists a standard variety called Scottish Standard English (SSE henceforth) with features that are distinct from other standards in its vocabulary, syntax, intonation and word stress, as well as – and these lie in the direct focus of the paper – segmental inventory, phonotactics and phonetic realisation of phonemes. Between SSE and the often very different local regional accents in Scotland, there is a linguistic continuum that can be illustrated with the following examples:



Scots, originally a separate language that evolved on a distinct path from Southern English, is today an essentially oral language resembling English sufficiently enough to be merely considered a dialect, or group of dialects, with frequently negative connotations (sub-standard, badly-formed English, slang, etc.). It is spoken by an estimated 85% of the population.[1] Although this continuum ranging from local Scots varieties to SSE involves not only pronunciation, our purpose here is to look at accents only. Code-switching concerns potentially all speakers; most of the time it is only the *range* of different forms available to a given speaker that can be different.

This Scots-SSE continuum can be extended towards a near-RP accent. In such an RP-influenced variety additional vowel phonemes appear; logically enough, the more it is modified the less it remains typically Scottish. Thus, for example, the vowels in TRAP and PALM, LOT and THOUGHT, FOOT and GOOSE can be distinct within each pair, while these lexical sets have the *same* vowel sounds in SSE and Scots. Modified SSE is characteristic of some (upper-) middle class speakers, politicians, lawyers, broadcasters, etc.

Owing to this fairly complex linguistic situation, we cannot provide a sociolinguistically and geographically complete overview of variation in English spoken with a Scottish accent. We have selected those features in relation to which our corpus revealed unexpected, new variants and modifications.

1 According to a representative governmental survey in 2010. Scottish Gaelic, the third language spoken in Scotland, is not a Germanic language like English, has a rather limited number of bilingual speakers, and is not discussed in this paper.

Methodology

Wells' 1982 description of English accents has not been re-edited and is still used as a reference in a lot of studies in the fields of phonetics, sociophonetics, phonology, dialectology, etc. Given the fact that accents change but change fairly slowly, most of the data and tendencies described some thirty years ago are probably still relevant today. However, oral data collection, data analysis and statistical processing of scientific findings have significantly evolved since then; corpus linguistics is now a major linguistic trend. What is missing is a new comprehensive overview of English accents that would take into account results from diverse and scattered individual studies.

More importantly, since this paper claims to examine evolving phonological processes in this variety, we therefore needed a solid basis with which our results could be compared. Thus, on the one hand, a span of thirty years seems to us to be sufficient to highlight any significant change. Also, the chapter on Scottish English (Wells, 1982: 393-416) is in itself based on a thorough overview of different studies and dialectal surveys available at the time, thus reflecting not only accents in the eighties but encompassing practically the whole century. On the other hand, we can also take any *newly observed* feature or variant as a likely sign of either on-going language change or changing linguistic habits of young speakers.

Clearly, taking the step between observed variation in speech habits in a corpus and the claim that it might represent language change is a huge and controversial one. Evidence ideally should come from the same population, based on the same methodology in two studies at a sufficient distance of time. Such real-time surveys are extremely rare (for examples cf. Labov 1994 and Foulkes & Docherty 1999). At the same time, if cross-generational differences with new phonological variables are detected in our data, it should not be forgotten that it does not automatically imply change over time but might simply be a sign of age-grading: speech habits that change for a given individual in his or her lifetime. This is why earlier studies are essential as points of comparison, and why present-day investigations are equally very important for the future.

The findings presented in the paper are based on our analyses of samples from a collection of authentic, present-day Scottish speech, one of the oral corpora of the PAC-PCE project (Carr *et al.* 2004). All results discussed in the paper come from word-list reading. Speakers come from the same region, South Ayrshire, the towns of Ayr, Prestwick and Annbank. While this sample is not representative of the region because of the method of selection (secondary social network collection with 'being born and bred in Ayr or near the town of Ayr' being the only selectional criterion) and because of the small number of speakers (7 male and 10 female speakers aged

between 18 and 82), nevertheless, it enables us to have access to authentic Scottish speech and observe phonological variation within one geographical variety. [2]

1. Consonants

There are a number of different Scottish features in the consonantal system. To start with the more subtle ones we can note the use of velarised /l/ in onset as well as coda positions, the glottal reinforcement or replacement of /t/, and the relatively weak aspiration of voiceless foot-initial plosives. Some of these, such as very dark /l/ leading to vocalization and glottal replacement of /t/ are sociolinguistically sensitive features and have presented variation for a long time. Linguistic change here only concerns *what is to be considered standard* and reflects similar processes in other varieties (for example the influence of Estuary English on RP[3]). Thus, glottal stops are still seen as non-standard and are used probably more frequently by young working-class speakers (for example in Glasgow, see Stuart-Smith 1999).

However, there are also other, much more clearly identifiable Scottish features and all of these are apparently undergoing change:

- The **velar fricative /x/** is a truly Scottish sound; in English it disappeared in the 17th century at the latest (Wells, 1982: 190). Today's /x/ comes directly from Scots and its occurrences in Scottish English are therefore restricted (mostly place names and a few borrowings). It seems, however, that this sound is frequently modified and gradually disappearing from Scottish accents today. Stuart-Smith *et al.* (2007) reported on intermediary variants used for /x/ in Glasgow, ranging from a fricative to a plosive in a sort of articulatory continuum. They found that, in spontaneous speech, young working-class Glaswegians use /k/ nearly all the time.
- The **voiceless labial-velar approximant** /ʍ/, whether it is analyzed as a separate phoneme or a sequence of /h/ and /w/, is less typically associated with Scotland since it is also found in General American, in Canadian English, as well as in very formal RP (Wells, 1982: 230, 495). Still, while in American accents Wells reports an ongoing change from /ʍ/ to /w/, and in RP its use is mainly restricted to being a rhetorical device in an oratory style, /ʍ/ is generally considered unmarked and frequent in Scottish English. Yet, it has been shown to be also highly variable; in Glasgow, for example, /w/ is more often used for /ʍ/ in working-class speakers, as well as in young speakers in

2 Results presented in this paper are therefore to be interpreted accordingly; no claims are made as to global tendencies within Scotland or South Ayrshire.

3 Although /mɪʊk/ and /leʔə/ are not integral part of RP yet, these allophones have been around for quite a long time (cf. for example MacMahon, 1998); this clearly shows how resistant standard accents are to change.

general, and intermediate variants have also been observed (Stuart-Smith *et al.* 2007: 233). In Edinburgh, Chirrey (1999: 227) reported variation and non-systematic contrast between /ʍ/ and /w/; and not exclusively in young speakers.

– The **rolled /r/**: non-Scots often have a stereotypical view of Scottish speakers 'rolling' their r's, that is to say that /r/ is realised as an alveolar trill [r] (Wells 1982: 410). This was probably the most commonly used and typically Scottish sounding /r/ until the late 19th – early 20th centuries, at least according to Grant's classic description (1914: 35). Nowadays, although [r] is still to be heard, especially in the more northerly parts of Scotland and particularly in rural speakers, it is overall quite rare. Also, stylistically, its use seems to be restricted to formal or 'declamatory' styles (Wells, 1982: 411). More recent accounts confirm the trill's relative geographical scarcity in the North and in the South of Scotland (Hughes *et al.,* 2005: 103, Cruttenden, 2001: 222) and point to its absence in some urban speech forms (in Edinburgh, Chirrey, 1999: 229).

Changing tendencies in /r/ realisations are, however, much more complex. In the following three sections we look at rhoticity and compare classic descriptions against our Ayrshire speakers.

1.1 Changing rhoticity

In Scotland, /r/ has several non-contrastive allophonic realisations; it is, like in many other languages and varieties, an extremely variable phoneme. This variability, however, is far from being random; it is conditioned by both internal and external factors.

The most common type of realisation for /r/ in everyday speech is a tap [ɾ] (Wells 1982: 411) and this tendency is confirmed in more recent descriptions (Laver 1994, Collins & Mees 2003, Cruttenden 2001). The use of a post-alveolar approximant [ɹ] or a retroflex approximant [ɻ] is also frequent (Wells, 1982: 411), confirmed more recently by Hughes *et al.*, who add that approximants are generally perceived as more prestigious (2005: 103). There are some indications according to which [ɹ] could be associated with young female speakers (Romaine 1978). A minority of speakers also uses uvular realisations [ʁ] as a personal idiosyncrasy, in some parts of Scotland (e.g. in Aberdeen; Wells, 1982: 411, and also Hughes *et al.,* 2005: 105-106). Wells argues, however, that this should not be regarded as a regional feature.

In general, the style of speech, sex, social status, and geographical origin of the speaker can all influence the realisation of /r/. As Wiese (2001: 24) points it out "[b]ecause r-sounds can vary freely, their variants are available for sociolinguistic functions [and thus] serve as a sociolinguistic marker". Also, modern articulatory techniques such as the UTI revealed some more subtle variations of tongue shapes

for coda [ɹ], with tongue tip down for working-class speakers, and tongue tip up for middle-class speakers (Lawson *et al.* 2010).

Beyond such external factors, taps and approximants are associated with certain phonological environments. The tap [ɾ] is the most frequent form in pre- and inter-vocalic environments (e.g. *g*r*eat* and *ve*r*y*), while the approximant [ɹ] is associated with post-vocalic environments (e.g. *ca*r*t, ca*r), and both types are frequent in word-initial position #_V (e.g. red) (Wells, 1982: 411).

1.2 Prevocalic variants

Our results from the Ayrshire corpus[4] show that, as suggested by earlier accounts, in prevocalic position, the most significant factor predicting the realisation of /r/ is the phonological environment, although gender and age may have some effect. The 10 female and 7 male speakers were divided into three age-groups: 1) old (O – 64 to 82 years old), 2) middle-aged (M – 45 to 55 years old), and 3) young (Y – 18 to 28 years old).

Three different realisations occurred: [r], [ɾ] and [ɹ]. In word-initial position, /r/ is generally an approximant [ɹ] (80%), and less commonly a tap [ɾ] (20%). No difference based on gender is apparent (figure 1). This contradicts Wells (1982: 411), who maintains that both [ɹ] and [ɾ] are frequent in this position.

In non-initial prevocalic position (C_V), /r/ is almost always a tap [ɾ], which confirms Wells' description (figure 2). Yet, approximant realisations [ɹ] also occur, especially for women. This is particularly the case for younger women, as the frequency of approximant realisations decreases with age for female speakers. One occurrence of a trill [r] was found in the speech of an old female speaker. This, again, confirms that trills are extremely rare.

Intervocalically (V_V), /r/ is generally a tap [ɾ], but differences emerge between male and female speakers (figure 3). While men consistently produce taps [ɾ], women also produce approximants [ɹ]. This is, again, particularly true for younger female speakers, for whom approximants are almost as frequent in this position as taps. This partly contradicts previous descriptions, since younger women seem to produce both taps [ɾ] and approximants [ɹ] in this environment.

In sum, phonological environment is a good indicator of non-postvocalic /r/ realisations in Scottish English. Taps are the most frequent in pre- and inter-vocalic environments (e.g. *g*r*eat* and *ve*r*y*), but approximants are more frequent in *word-initial* position (e.g. r*ed*). The first tendency to note, then, is that taps are less frequent word-initially, which has either been overlooked so far or is a relatively recent

4 Results are based on an auditory analysis of prevocalic and non-prevocalic /r/ from a word list read by 17 speakers. Further results, for 8 speakers, based on acoustic analyses are presented in Jauriberry (2010).

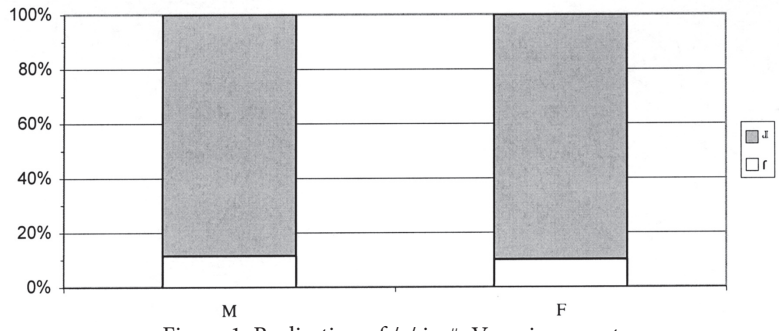


Figure 1: Realisation of /r/ in #_V environment

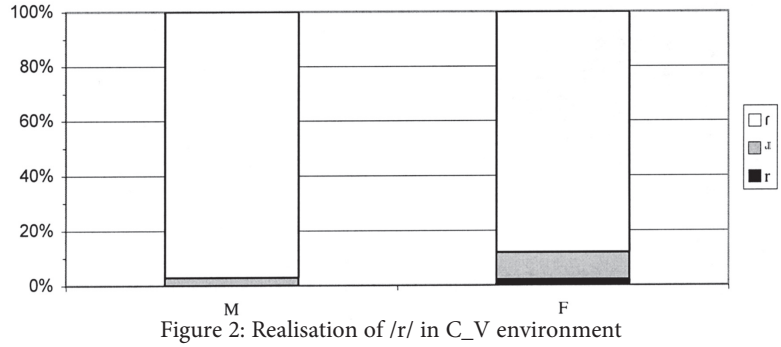


Figure 2: Realisation of /r/ in C_V environment

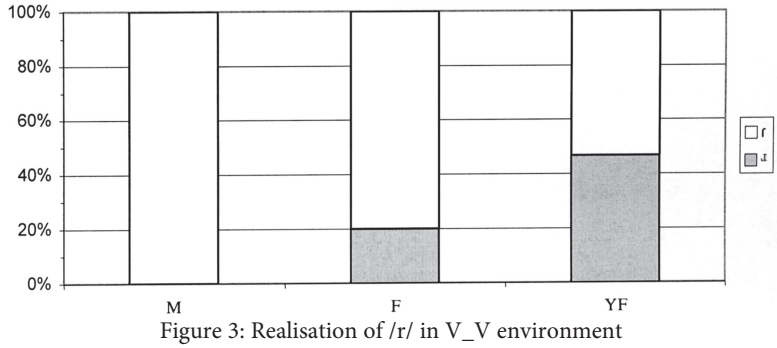


Figure 3: Realisation of /r/ in V_V environment

evolution. Also, while taps are the only variant used by male speakers intervocalically, *both* taps and approximants are used by women, especially young women. Thus, the second tendency we have observed is that approximants occur just as frequently as taps in intervocalic position for some speakers; this might be a sociolinguistic marker for young women.

1.3 Postvocalic variants

It is generally said that Scottish accents are rhotic, and have preserved coda /r/ (e.g. *ca<u>r</u>t, ca<u>r</u>*) (cf. Wells 1982, but also Roach 2001, Collins & Mees 2003, Hughes *et al.* 2005). Yet, a decline of rhoticity has been observed from at least the late 1970s (Romaine 1978), and the loss of coda /r/ was confirmed in a number of studies based on acoustic and/or articulatory analyses, especially in the last decade (Stuart-Smith 2007, Stuart-Smith *et al.* 2007, Lawson *et al.* 2008, Lawson *et al.* 2010, Llamas 2010).

In these studies, coda /r/ was extremely variable, ranging from consonantal realisations such as [r], [ɾ], [ɹ], through various pharyngealised, uvularised, rhoticised vowels, diphthongs, to complete absence of rhotic constriction, termed 'zero realisation' and symbolised [Ø]. Acoustically, strong [ɹ] (typical rhotic) has F3 lowering, while for [Ø] (typical non-rhotic) the formant structure is stable. Furthermore, UTI revealed some gestural delays of the tongue leading to a production / perception gap and thus perceptive uncertainty of rhoticity (Lawson *et al.* 2008). In addition to this, F3 lowering was not systematically observed for rhotic pronunciations.

Our results from the Ayrshire corpus confirmed a great variability for coda /r/. The various realisations can be divided into the following categories: [r], [ɾ], [ɹ / ɚ], which represents approximants *and* rhoticised vowels, [h], a slight pharyngeal/glottal voiceless fricative, [Və] which represents any centring diphthong, and [Ø], zero realisation, i.e. a monophthong without secondary articulation or rhotic constriction. As for the distribution of these variants, we found that 1) degree of stress is important: zero realisation is more frequent in unstressed syllables, and 2) the phonological environment is also important: rhotic constriction is least expected in unstressed syllables *before a following consonant*, while it is more frequently present in stressed syllables word-finally (figure 4). The overall rate for non-rhoticity was 52.5% (taking [Ø] and [Və] as non-rhotic variants, others being considered rhotic).

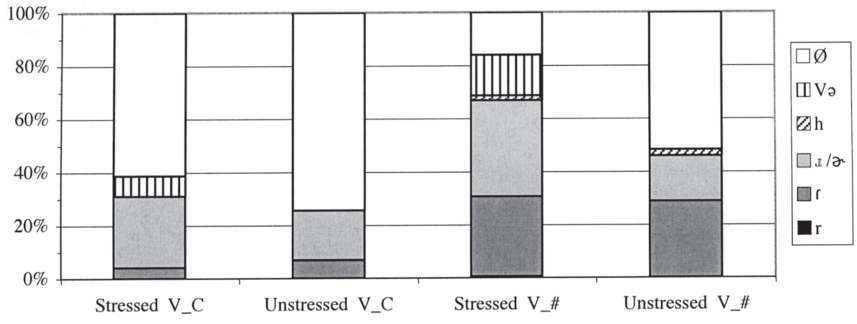


Figure 4: Non-prevocalic /r/ according to syllable stress and phonological environment

The external factors of gender and age also show some effect on /r/ production, both on its presence and its realisation. On the one hand, the younger the speakers, the less rhotic they are, for both stressed (figure 5) and unstressed (figure 6) syllables. There is a clear link between age and rhoticity (χ^2=12.993, df=2, $p < 0.01$). The analysis of [h] as either rhotic or non-rhotic is also crucial for the outcome. On the other hand, though some differences are apparent between men and women, gender is not here a significant factor for the overall *rate* of rhoticity (χ^2=1.849, df=1, $p > 0.05$) (figures 5 and 6).

However, there is a significant effect of gender concerning the *type* of consonantal realisation for /r/ (χ^2=13.754, df=1, $p < 0.001$, for [ɹ] vs [ɾ]). In line with previous statements (e.g. Romaine 1978), and similarly to our pre-vocalic findings, [ɾ] is more frequent in male speakers and [ɹ] is more frequent in female speakers (figures 5 and 6). To look at one particular example, *differences of rate and type of rhotic constriction* based on gender differences are particularly striking for preconsonantal /r/ in unstressed syllables (figure 7). This means that in words like *leopard, shepherd, afterwards*, men produced either a tap or nothing, while women used only rarely taps, more often approximants, and most often nothing. Thus, non-rhoticity is different in men and women in this specific environment, although this is not a general tendency (cf. figures 5 and 6).

In addition to the findings presented here, Jauriberry (2010) confirmed for the same Ayrshire corpus that speech style is also an important influencing factor both with regard to rhoticity and the type of rhotic used. Thus, rhoticity is stronger in a more formal style (reading a word list) than in a more informal style (a casual conversation between friends or acquaintances). Jauriberry's results suggest that older and younger speakers may have different strategies relating to overt and covert prestige (for more cf. Jauriberry 2010).

Scottish /r/ is thus extremely variable, especially in coda position, but this variability is structured according to both internal and external factors, and /r/ is probably socially stratified. Furthermore, the progressive loss of non-prevocalic /r/ seems to be a change in progress in Scotland. This is in line with variability reported in various parts of Scotland in the literature (see above), where we have seen the presence and realisation of /r/ shown to be related to both linguistic (syllable stress, phonological environment) and extralinguistic (gender, age, socio-economical status, speech style) factors.

All in all, there is convincing evidence that Scottish accents are less rhotic than they used to be. The first study that revealed non-rhoticity in Edinburgh (Romaine 1978) presented a global proportion of only 15% of non-rhotic word-final coda /r/ in the speech of 24 young children (aged from 6 to 10). This global figure is 52.5% according to our study, but similar tendencies emerge from other investigations (in Glasgow, for example, Stuart-Smith 2007, Stuart-Smith *et al.* 2007)

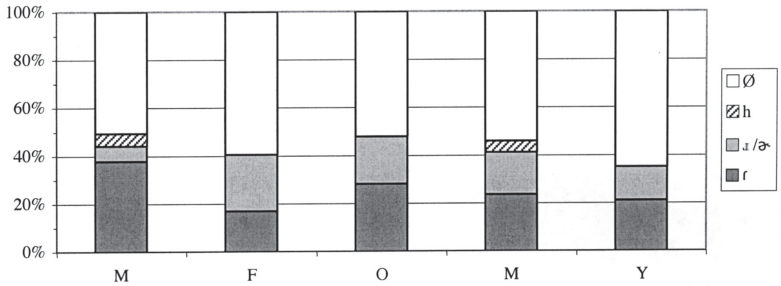


Figure 5: Non-prevocalic /r/ in stressed syllables according to gender and age

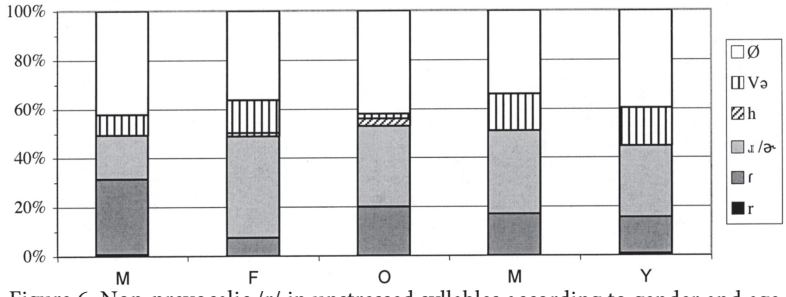


Figure 6: Non-prevocalic /r/ in unstressed syllables according to gender and age

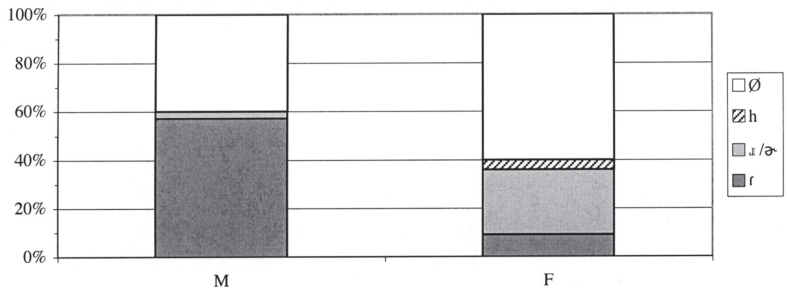


Figure 7: Non-prevocalic /r/ in prepausal (_##) unstressed syllables according to gender

The extent of non-rhoticity is difficult to establish when it comes to defining the 'leading' socio-economic groups and geographical regions. Socio-economic status seems significant: while non-rhotic coda /r/ remains sporadic in middle-class speakers, it is prevalent in working-class speakers, especially young males. Our corpus was not a balanced sample in this respect, therefore we cannot verify any contrasts between subgroups. Overall, our speakers came from mixed working-class to lower-middle-class backgrounds. As for regional centres or innovation loci within Scotland, most of the studies available focus on the two most important urban areas, Glasgow and Edinburgh, although some work has also been done along the Scottish-English border (Llamas 2010).

2. Vowels

Following Wells' description of Scottish English the complete inventory of Scottish vowel sounds can be presented in Table 1. The basic system has nine monophthongs and three diphthongs and the 'modified' system contains three more phonemes, LOT, PALM and NURSE. This 'modified' vowel inventory is characteristic of RP-influenced speech and concerns a minority of Scottish speakers.

/ɪ/ KIT	/**i**/ FLEECE, NEAR	/**u**/ FOOT, GOOSE, CURE	/**ae**/ PRICE
/ɛ/ DRESS	/**e**/ FACE, SQUARE	/**o**/ GOAT, FORCE	/ʌʊ/ MOUTH
/ʌ/ STRUT	/**a**/ TRAP, BATH, PALM, START	/ɔ/ LOT, CLOTH, THOUGHT, NORTH	/ɒɪ/ CHOICE
/ɒ/ LOT, CLOTH, NORTH		/ɑ/ PALM, START	/ɜ/ NURSE

Table 1. Wells' vowel chart for Scottish English (1982: 399, with modifications)

Historically speaking, the Scottish vowel system is extremely conservative. For example, according to Wells (1982):

1. The so-called NURSE merger has not taken place in Scotland which is why the vowels of KIT, DRESS and STRUT are found in NURSE words: bird /bɪrd/, fur /fʌr/, pert /pɛrt/. In English English (EngEng), these vowel sounds can no longer occur before /r/ – the result of the NURSE merger that took place sometime between the 15th and 18th-centuries (1982: 199-201).
2. Similarly, the lack of the FORCE merger in Scotland maintains different vowel sounds in NORTH and FORCE words (cf. Table 1): *short, cork, horse* with /ɔ/ and *sport, pork, hoarse* with /o/ (for more, cf. 1982: 234-235).
3. Also, because of retaining full rhoticity, there are no centring diphthongs in Scottish English: NEAR, SQUARE, CURE.[5]
4. Finally, phonemic contrasts between TRAP and PALM, LOT and THOUGHT, as well as FOOT and GOOSE are missing for most of the speakers.

In addition to the particular characteristics of such a Scottish English accent as described above, we should complete the picture with regional and sociolinguistic variation and direct influences from Scots. As we said earlier, code-switching between standard and sub-standard values and continuous Scots interferences are present in the speech of a majority of speakers. Such a description, however, is not directly relevant for our study and we shall therefore move on to the questions relating to vowel duration.

5 The consequences of a gradual change from full rhoticity to variable rhoticity and eventual non-rhoticity on the vowel system will not be discussed here.

2.1 Vowel length in Scottish English

The Scottish English vowel system is not only very different from standard EngEng because of its composition, but also because monophthongs lack the usual short-long opposition: /i e u o ɔ a/ are not longer than /ɪ ɛ ʌ/. Thus, in identical environments, for example in words like *pit, peat, pet, pate, putt, put, pot*, the vowel sounds will have approximately the same duration.

But there are certain phonological environments where vowels are longer, namely morpheme-finally, before voiced fricatives and /r/[6] – this phenomenon is known as the Scottish Vowel-length Rule (SVLR henceforth). For example, we have phonetically long vowels in *key, two, stay, know, sleeve, smooth, maze, pour, Kerr* and *Oz*, and *knee#d* is longer than *need*, *brew#ed* is longer than *brood* (Wells' examples, 1982: 400-401). KIT and STRUT do not vary. Related to this quantitative alternation in monophthongs, there is also one of the diphthongs with a slightly longer, and qualitatively different variant: tied [taˑed] vs. tide [tʌid], sighed [saˑed] vs. side [sʌid] (1982: 404). The triggering environment is the same: morpheme-final position, following voiced fricatives, and /r/.

In addition, the usual long-short realisations of vowel sounds before voiced and voiceless consonants, respectively, are not observed in Scottish English. In a majority of different English accents, voiced plosives, fricatives and affricates will have a phonetically longer preceding vowel sound than their voiceless counterparts. In Scottish English, long realisations will appear before voiced fricatives but not before voiced plosives and affricates.

The extent of regional and social variation in these three related areas is uncertain. The most controversial of the three is SVLR, and there exist fairly divergent descriptions (cf. Scobbie *et al.* 1999 for a concise and reliable appraisal). Wells (1982) mentions that 1) not all the monophthongs participate in the SVLR for every speaker, 2) there seem to be additional environments and slight differences within, depending on various factors, and 3) related to each aspect there is probably considerable regional variation (see also Pukli [2006] for a comprehensive review).

2.2 Differences confirmed

Our results corroborate the particularity of Scottish English vowel length in all three respects. First of all, based on word-list data from 14 speakers (7 male and 7 female speakers), we can see the absence of *traditional* durational differences in monophthongs (cf. figure 8 for relative vowel durations in monosyllabic words preceding /t/). High standard deviation indicates that there is considerable inter-speaker variability.

6 This applies to monosyllabic words; there is no *clear* evidence of the same phenomenon in polysyllabic words.

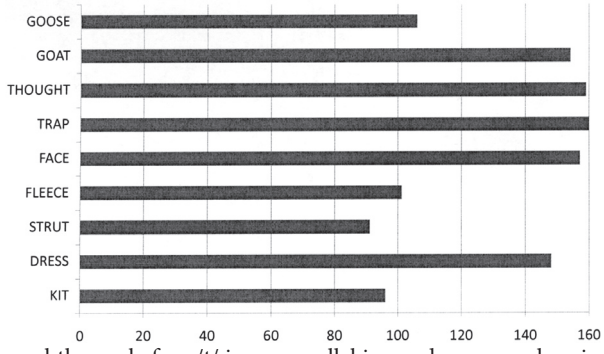


Figure 8: Monophthongs before /t/ in monosyllabic words; mean values in miliseconds

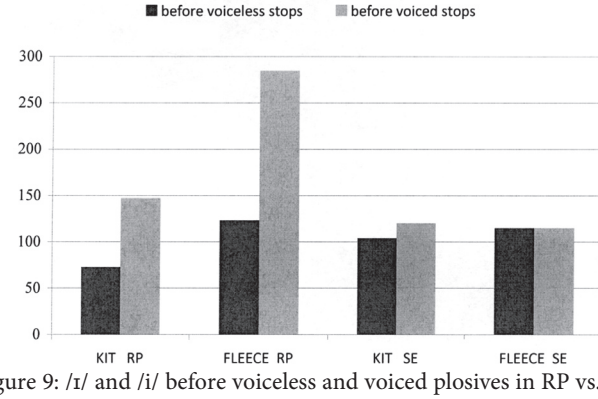


Figure 9: /ɪ/ and /i/ before voiceless and voiced plosives in RP vs. SE

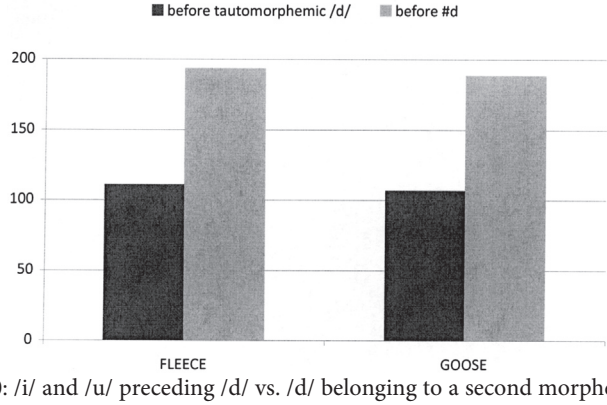


Figure 10: /i/ and /u/ preceding /d/ vs. /d/ belonging to a second morpheme in SE

However limited the significance of mean values of vowel durations might be, results seem to suggest that there is a two-way division: KIT, STRUT, FLEECE and GOOSE (shorter, around 100 ms) vs. DRESS, FACE, GOAT, THOUGHT and TRAP (longer, around 150 ms). This might arguably reflect, with the exception of STRUT,

phonetic duration triggered by articulatory openness, although, in such a case one would expect a more scalar distribution of length. In addition, FLEECE and GOOSE are certainly short here, but can be lengthened in certain environments while FACE, GOAT and THOUGHT will vary but little (more on this in the next section).

Secondly, we can observe the absence of the voicing effect; the same vowel in two environments (voiceless vs. voiced) displays the same duration (figure 9). This can be compared to the results of an acoustic study of RP vowels (Giegerich, 1992: 234): whereas both KIT and FLEECE vowels are at least twice as long when followed by voiced plosives in RP, their duration remains unchanged in Scottish English (data from 6 speakers for whom minimal pairs were available).

Thirdly, the particularity of Scottish vowel length was confirmed in our corpus in morphologically simple vs. complex words. Comparing the same vowel sound before /d/ vs. before the suffix /d/, we have found a systematic difference for 14 speakers (7 males and 7 females). For example, /i/ and /u/ in *agreed* and *brewed* were 75% longer than in *greed* and *brood*, respectively (figure 10).

2.3 Some vowels are less variable

The situation, however, is slightly more complex when we look at the details of our results. Some vowels are less typically Scottish in their length in that they do lengthen to some extent before voiced plosives, and in that they are not systematically longer morpheme-finally preceding the suffix /d/ than before a tautomorphemic /d/. Thus, while /i/ and /u/ clearly have short and long variants in SVLR environments, /e o ɔ/[7] do not seem to be sensitive to morphological complexity (figure 11). To complicate the situation, while /i/ and /u/ are very stable in their duration when followed by voiceless and voiced monomorphemic plosives, /e o ɔ/ are slightly longer in the latter environment.

As for sociolinguistic differences in the results for /i/ and /u/, we did not expect to find any. A brief look at the relative increase in the duration of /i u/ preceding tautomorphemic /d/ vs. /d/ separated by a morpheme boundary reveals, however, that while the sex of the speaker does not seem to play any role, age might be important (figure 12). We can see that short realisations are grouped around roughly 100 ms for all, but long realisations are slightly longer for speakers over 50 years of age (subjects are divided here into 6 young [18 to 23] and 8 older speakers [50 to 82]).

Whether these results can be interpreted as a changing tendency is not clear. We cannot argue that previously existing long-short variants for certain monophthongs have now disappeared since there is neither enough instrumental evidence of what the situation exactly was in the 20th century (mostly informal, impressionistic data), nor of what the current situation is across Scotland. We can say that our results

7 KIT, DRESS, STRUT and TRAP were not available for this environment.

from Ayrshire speakers confirm a tendency observed in Edinburgh and Glasgow concerning the SVLR-related variation of /i u/ and /ai/.[8] As for age-graded variables, or a possible moderation of lengthening in younger speakers, similar findings have not been observed in the literature.

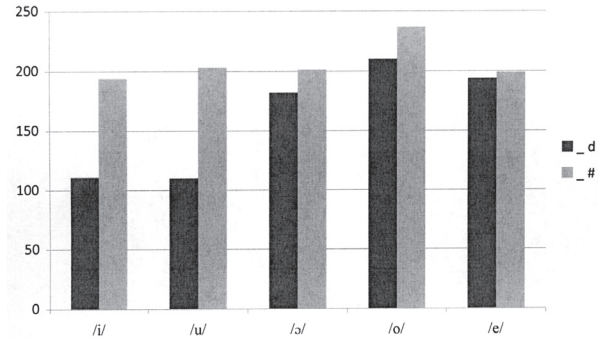


Figure 11 Monophthongs before /d/ vs. inflectional /d/

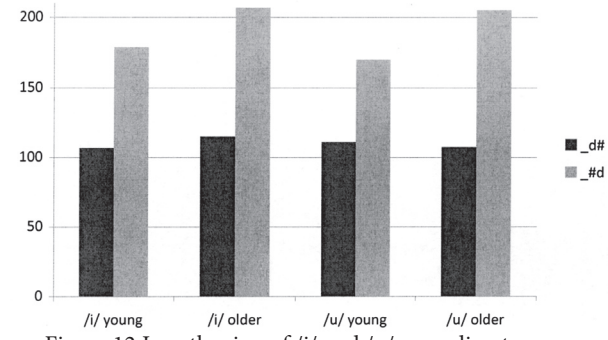


Figure 12 Lengthening of /i/ and /u/ according to age

There are, also, certain limitations that have to be mentioned and which concern not only our investigation but the study of vowel length in Scottish English in general. First, while Scots is the origin of the SVLR – it was first observed and described in varieties of Scots – there are no instrumental studies of vowel length in this variety. This makes it impossible to have a global view of the situation. Second, reactions observed in our speakers clearly indicate that it is difficult to reliably elicit Scots words with a written stimulus, especially a word list. There were a number of dialectal words (*gey, brae, twa, gyte*) in the list and speakers only exceptionally identified and pronounced them as expected. Third, there are no data available on SVLR in spontaneous speech. This is due to the methodological complexities of measuring vowel duration: one needs comparable environments in terms of degree

8 For a discussion of /ai/ in the corpus cf. Pukli (2006); for a general discussion of the diphthong cf. Scobbie *et al.* (1999).

of stress (nuclear stress, ideally, for all tokens) and sufficient number of words (which is always unpredictable in non-scripted speech).

Conclusion

Accents change just as language changes over time. Pronunciation changes are certainly slow and language users are apt to comment on new features and often will take a prescriptive stance: changes in standard varieties are undoubtedly the slowest. *Why* accents change beyond the mere necessity of change – since a lack of alterations will only characterize a dead language having lost its speakers – is always difficult to explain. For Scottish English, RP and London English have both been mentioned as possible influences. At the beginning of the last century, Grant already thought that the imitation of Southern English speech might be the cause of the loss of the traditional rolled-r (Grant, 1914: 35). More recently, media effects and Cockney features in popular television programmes were put into spotlight for being potentially responsible for the loss of local /x/, /ʍ/ and the appearance of non-local variants (such as /f/ for /θ/, etc) (see Stuart-Smith *et al.* 2007 for an overview and critique of this claim). As for RP, it may play an important role in the speech habits of modified SSE speakers, but its overt prestige among the majority of Scots remains very low.

In any case, the popular view that accents follow directions set out by clear, external factors and the imitation thereof remains, however, much too simplified if not entirely wrong. Other external influences, complex psychological and social constructs linked to identity, new ways of dialect diffusion, as well as purely internal factors should also be considered (for more on this cf. studies in Labov 1994 and Foulkes & Docherty 1999, for example).

Based on empirical evidence, we have shown that variation is characteristic of many typically Scottish phonemes and that patterns often emerge related to both phonological and sociolinguistic factors. First, we have pointed out variation linked to phonological environment in non-postvocalic /r/ realisations (approximants are more frequent in word-initial position (e.g. *r̲ed*), taps are more frequent in pre- and inter-vocalic environments [e.g. *gr̲eat* and *ver̲y*]), and we have suggested that the use of approximant /r/ could be a sociolinguistic marker, characteristic of (young) female speakers. Second, we have found a high proportion of non-realised /r/ in the traditionally rhotic Scottish accent of our Ayrshire speakers. The non-realisation of /r/ was shown to be linked to stress (zero realisations being more frequent in unstressed syllables), and to the phonological environment (frequent zero realisations before consonant when unstressed, and word-finally when stressed). We have also evoked the possibility of gender and age having an effect.

Finally, we have observed variation in vowel sounds and vowel length in our corpus. We have confirmed the predictable long-short variation of /i/ and /u/ in specific phonological environments (SVLR: *knit*, *neat*, *nid* and *need* are all short while long /i/ occurs before the suffix /d/) in opposition to the different patterning of /e o ɔ/ in the same environments. Although empirical data that we could use to weigh against our findings are relatively scarce given the complex nature of the question, we have also suggested that there may be short vowels, KIT and STRUT, long vowels, DRESS, FACE, GOAT, THOUGHT and TRAP, while the duration of FLEECE and GOOSE depends on the morpho-phonological environment. In other words, some vowels are less typically Scottish because they lengthen *to some extent* before voiced plosives, and at the same time, they fail to lengthen morpheme-finally preceding the suffix /d/ as opposed to before a tautomorphemic /d/.

The Scottish English vowel system is not necessarily evolving away from SVLR and towards voicing-related general lengthening. Most probably traditional accounts are simply too vague, admitting but not specifying a great deal of regional variation; disposing of more data is crucial to get a clearer view.

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